

2022

MICROBIOLOGY — HONOURS

Paper : CC-1

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Question no. 1 is compulsory and answer **any three** questions from the rest.

1. Answer **any ten** questions : 2×10
- (a) Define strain in respect of bacteria.
 - (b) What is mesokaryotic form of microalgae?
 - (c) Name two protozoal disease and their causative agents.
 - (d) Which bacterium has been used as the first biopesticide on commercial scale?
 - (e) Differentiate between archaea and bacteria on the basis of their cell wall and cell membrane chemistry.
 - (f) Mention the infective stage of *Plasmodium* in human. Mention the mode of transmission of *Giardia sp.*
 - (g) State the Germ Theory of Disease. Name a pioneer proponent of this theory.
 - (h) What was Elie Metchnikoff's contribution in the field of immunology?
 - (i) What is meant by Binomial Nomenclature?
 - (j) Distinguish between haplontic and diplontic life cycle.
 - (k) Why is yeast used in bakery?
 - (l) What is meant by the statement "The yeast *Saccharomyces cerevisiae* is heterothallic"?
 - (m) Name two fungi that spoil our food.
 - (n) What is kala-azar?
 - (o) What are single cell proteins?
2. State whether the following statements are **true** or **false**. Briefly explain your answer (**any five**) : 2×5
- (a) Phenol was the earliest disinfectant used.
 - (b) All fungi are harmful for agriculture.
 - (c) Algae show great diversity in pigmentation.

Please Turn Over

- (d) Viroids and viruses are one and the same.
- (e) Gelatin is preferable over agar as a solidifying agent.
- (f) Prions are cellular organisms.
3. (a) What is the basis of Whittaker's five kingdom classification? Name the different kingdoms proposed by this system of classification along with one example of each.
- (b) Do you feel three domain system is more useful than five kingdom system? — Justify your answer.
- (c) State Koch's Postulates. (1½+2½)+3+3
4. (a) How chlorella is useful in space flights and nuclear submarines?
- (b) What is chasmolithic algae? Give an example.
- (c) Define chlorophyceae and cyanophyceae on the basis of colour imparted by their photosynthetic system.
- (d) What are the different types of flagella found in algae? 2+2+3+3
5. (a) Describe various types of asexual spores found in fungi.
- (b) What do you mean by sewage fungus?
- (c) Mention four commercial uses of fungi.
- (d) Define heterokaryosis with example.
- (e) Define mycotoxin with an example. 3+1+2+2+2
6. (a) Differentiate between the two morphological stage of *Leishmania donovani*.
- (b) What is mastigophora phylum of protozoa? Give example.
- (c) Write down the life-cycle of *Plasmodium*.
- (d) Name two harmful protozoa. 3+2+3+2
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